



3 R's for the new century

HOME AUDIT KIT

*A Guide to Help Make Your Residence
an Environmentally Friendly Place*

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Contents

Page 3 -- Saving Energy

Page 7 -- Saving Water Inside and Outside

Page 9 -- Reduce, Reuse, Recycle

Page 11 -- Reducing Hazardous Waste in
The Home

Page 12 -- An Environmentally Friendly
Yard

Page 13 -- Your Automobile and the
Environment

Page 15 -- Green Consumerism

SAVING ENERGY

The amount of energy we consume is one of the primary factors in determining the quality of our environment. Every step of the energy cycle – the extraction of energy resources such as coal and oil, the conversion of these resources into usable forms in oil refineries and electrical generating facilities, the transportation of the fuels, their use in automobiles and furnaces, and the disposal of the wastes produced, are major sources of air pollution, water contamination and land degradation.

Home Heating and Cooling

In this country, more energy is used for heating houses and apartments than for any other purpose. Of the six billion tons of carbon dioxide (a major contributor to global warming) that human activities put into the atmosphere each year, more than one billion tons come from burning fuel to heat homes. Each kilowatt hour of electricity that we use adds about 1.6 pounds of carbon dioxide to the air. Here are some things you can do to save energy on heating and cooling your home (they really can make a difference):

- | **Have an "energy audit" done on your house.** Hire a professional (some utility companies provide energy audits free of charge) or do it yourself. If you do it yourself, choose a windy day so drafts will be easily detectable. Use a lighted candle to check for leaks around windows, doors, fireplace dampers, cracks or holes in walls and ceilings, anyplace where plumbing or wiring fixtures penetrate walls, floors, or ceilings. A flickering flame will indicate areas where caulking or weather-stripping is needed. Instead of a candle, you can use a lighted incense stick and observe which way the smoke goes. Adding caulking and weather-stripping where they're needed can cut down significantly on heat loss and keep as much as 1,000 pounds per year of carbon dioxide out of the air.
- | **Have your furnace "tuned up".** Oil furnaces should be tested, cleaned, and adjusted every year; gas furnaces, every two years. This should be done by a heating technician. An inefficient heating system can waste 20% or more of the energy that it uses. An efficiency test is part of the routine cleaning procedure for oil and gas furnaces. Have the technician write the results on your receipt; keep track from year to year to detect any problems.
- | **If your heating system is more than 18 years old (10 to 12 years for heat pumps), it may have reached the end of its life expectancy.** Consider replacing it with a new, energy-efficient system; this will help the environment, increase the value of your house, and significantly decrease your utility bills, since some of the new systems use only half as much energy as old ones.
- | **Lower the thermostat in winter.** You will cut down on the energy your furnace uses by 2 to 3 percent for every degree that you lower it. Recommended settings are 65 - 68° during the day and 55° at night. If no one is home during the day, set it lower than 68.
- | **Install an automatic setback thermostat.** Set it to automatically reduce the temperature at night and during times when no one is at home.

If every household in the U.S. lowered its average heating temperatures six degrees during a 24-hour period, nationwide we would save the equivalent of more than 570,000 barrels of oil per day

- | **Find out if your home is sufficiently insulated.** A properly insulated attic can reduce your fuel costs and harmful emissions by 20 to 50 percent. In the attic, check between the joists. In outside walls, turn off the power to an electrical outlet, remove the switchplate, and shine a flashlight into the opening to see whether insulation is present. In basements, check between floor joists and in walls. See if the insulation is spread evenly and is dry (insulation loses most of its insulating value when it is wet). Measure the thickness. As a rule of thumb, 9 to 13 inches of fiberglass insulation is sufficient for the attic; 3 to 6 inches in the floor and walls.
- | **Also, insulate hot water pipes, heating ducts, and crawl spaces.** Ten percent of the energy you use could be escaping through these areas.
- | **Consider installing a ceiling fan.** This can save energy (and money) on air conditioning by producing air currents that carry heat away from the skin, making the room feel cooler. Buy a fan with reversible motor, and you can save on heating as well by recirculating the hot air that rises to the ceiling. (The air at the ceiling can be as much as 15° warmer than the air at floor level.)
- | **Install storm windows.** An inexpensive alternative to buying storm windows is to tack clear polyethylene plastic to the outside of your windows.
- | **When installing new windows, keep in mind that double-pane windows retain twice as much heat as single-pane windows.** Double-pane units with a low-emissivity (low-E) coating often cost no more than units with regular glass and can double the R-value of the windows. A low-E coating is an extremely thin metallic layer that lets the sun's warming rays in but doesn't let them back out.
- | **When buying new windows, don't overlook the importance of the frames** – good wooden frames will prevent a lot of the leakage that would occur with aluminum frames.
- | **Make sure the damper on your fireplace is closed;** otherwise, 5% of your heating expense could be going up the chimney.
- | **Air conditioning units work more efficiently if they are in the shade** than if they have the hot sun beating down on them. If you cannot locate your unit in a shady spot, build a wooden shelter around it to keep the sun off.
- | **Plant trees near your house.** Deciduous trees on the south side of the house let the sun warm the house in winter but provide shade in the summer. They will cut down on the need for air conditioning by providing shade and cooling the air through transpiration. They also remove carbon dioxide from the atmosphere.

Water Heater

- | **Set thermostat to 130°F** (unless you have a dishwasher with no heater, in which case 140°F is necessary). Use a thermometer to measure the temperature; water heater dials are frequently inaccurate.

According to the U.S. Department of Energy, if each person raised the temperature of their air conditioner by six degrees, we would save about 190,000 barrels of oil each day.

- | **Put your hand on the side of the water heater. If it feels warm, it is not sufficiently insulated.** Wrap an insulating blanket around it (available at hardware stores). You will often recover the cost of the blanket within a few months. This is especially important if the water heater is in an unheated area.
- | **Every couple of months, drain about two quarts from the valve faucet at the bottom of the water heater.** This will prevent the accumulation of sediment and will keep the water heater operating efficiently.

Refrigerator

- | **Clean the condenser coils** at least once a year (wipe, vacuum, or brush).
- | **Make sure the door gasket is clean and tight:** insert a piece of paper between the door and cabinet and close the door; it should take some effort to pull the paper out. Do this in several spots along the door.
- | **Check the temperature inside the refrigerator and freezer periodically.** Ideally, the refrigerator portion should be at 38 - 42°F, while the freezer should be at 0 - 5°F.
- | **If your refrigerator is not a self-defrosting model, ice will tend to form on the cooling coils.** This ice will act as an insulator and will effectively prevent the coils from doing their job. **Defrost the refrigerator** if you see a buildup of ice on the coils.
- | **Keep the refrigerator and freezer fairly full.** Food retains cold better than air does. But be sure to leave enough room for the cold air to circulate.
- | **Plan ahead when you want to defrost food.** When you remove it from the freezer, allow it to defrost slowly in the refrigerator. The coldness contained in the food will help keep the inside of the refrigerator cool with less work for the motor.

Other Appliances

- | **When buying new appliances, look for the most energy efficient models you can find.** Many of the major appliances are required to display a yellow label showing their energy efficiency rating (EER). This label will give estimated yearly costs of operating the appliance. Take this cost into consideration when choosing a model; you may save money in the long run by buying a more expensive model that will use less energy during its lifetime than a cheaper model.
- | **Microwave ovens can be twice as efficient as conventional ovens** for relatively small portions, but are the least efficient cooking method for such items as turkeys, large roasts, etc. A toaster oven is also preferable to a large conventional oven for heating small amounts of food.

The nation's refrigerators consume the yearly output of about 25 large power plants, seven percent of the total electric consumption in the U.S. and more than 50 percent of the energy produced by nuclear power plants.

- | **When preheating a conventional oven, don't preheat longer than necessary.** Ten minutes is usually sufficient. Preheating is not necessary for broiling or roasting – only for baking.
- | **Don't use the microwave oven to defrost food.** Allow food to thaw in the refrigerator if time allows, or on the counter.
- | **Run the dishwasher only when it is full.** Use an energy saving cycle if you have it, and let the dishes air dry.
- | **Avoid using garbage disposals as much as possible.** Give meat scraps to pets; add vegetable scraps to the compost pile.
- | **Most of the energy used in washing clothes goes toward heating the water.** If you frequently wash clothes in hot water, try using warm or cold instead. Hot water usually isn't necessary, especially with modern detergents. **Always use a cold water rinse.** The rinse cycle does not affect the cleanliness of the clothes.
- | **Wash lightly soiled clothes on the delicate cycle.** This will save energy and will also decrease wear and tear on the machine and on your clothes.
- | **Clean the lint filter** on your clothes dryer after every load.
- | **Dry clothes of similar weight together** so that all of the clothes in a given load will be dry at about the same time.
- | **Use a clothesline**, let the sun and wind dry your wash. If you are short on space outside, try a drying rack inside.

Lighting

According to the EPA, lighting accounts for 20 – 25 percent of the electricity used in this country. Improving our lighting efficiency could actually provide better lighting while using only half as much electricity, reducing carbon dioxide emissions by more than 200 million tons a year and significantly reducing air pollutants that contribute to acid rain.

It takes about 394 pounds of coal to keep a 100-watt incandescent light bulb lit for 12 hours a day for one year. At a rate of 8.8 cents per kilowatt hour, the cost to operate the light during daylight hours is about \$38.59 per year.

- | **As your incandescent light bulbs burn out, replace them with the new compact fluorescent bulbs.** These bulbs screw into regular light bulb sockets and emit a light that looks just like that from incandescents. They cost a lot more than incandescent bulbs (generally, \$10 to \$25 apiece), but the energy they will save over the course of their lifetime will make up for the difference at least two or three times over. They use only about ¼ of the energy that incandescents require and last ten times as long. Amazingly, simply replacing a traditional bulb with a compact fluorescent will reduce the amount of carbon dioxide released into the atmosphere by half a ton over the life of the bulb.

Do some research before you buy compact fluorescent bulbs. They are not suitable for all uses (e.g., they shouldn't be used with dimmer switches) and will not fit all fixtures. Your utility company can provide information and list of local sources of these bulbs.

- | **Turn off lights when not in use.** This sounds self evident, but many people don't do it, sometimes because they mistakenly believe that it takes more energy to turn a light on then to leave it on.
- | **Don't use more wattage than you need** Try replacing your bulbs with lower wattage ones and see if they are adequate.
- | **Use fewer bulbs in multi-bulb fixtures.** One 100-watt incandescent bulb uses less energy than two 60-watt bulbs but gives off just as much light. (Note: as a safety tip, if you remove bulbs from a multi-bulb fixture, don't leave the sockets empty; put in burned out bulbs.)
- | **When repainting the interior of your house,** remember that light-colored walls will make the house appear brighter with less lighting than darker walls.

For more information on saving energy in the home, call the Washington State Energy Office at 1-800-962-9731. You can also request their brochure, "FREE Publications on Saving Energy and Money" for further energy saving information.

SAVING WATER INSIDE AND OUTSIDE

Human beings need about 4 gallons of water per day to survive. The average Washingtonian uses around 75 to 90 gallons of water per day. We are accustomed to having all the water we want, and most of us rarely think about the environmental and financial costs of wasting water.

When we use more water than we need, we are wasting money and energy and increasing water pollution unnecessarily. It costs money and energy to deliver water to your home, whether your water comes from a public water supply or is pumped from a private well. Disposal of wastewater after it leaves your house also costs money and uses energy. Too much water entering a treatment plant or septic system can overburden the system and result in water pollution. We can reduce our water consumption by 20 to 40% at very little expense or inconvenience.

Inside the House

- | **Check for leaks** – Turn off all water-using appliances in the house. Read your water meter. Wait 30 minutes and re-read your meter. If the meter reading has changed, you have a leak.
- | **Check the toilet for leaks** – Place some food coloring in the tank. Check the bowl after 15 minutes. If the water in the bowl has changed color, the toilet is leaking. Most can be fixed with parts purchased at the hardware store.

In the Bathroom

- | **Install water-saving faucet aerators and water-saving showerheads** (3.0 gallons or less per minute). Older showerheads may use 5 to 10 gallons per minute. Many low consumption showerheads come with a shut-off valve, allowing you to shut the water off while soaping up, then turn it back on without readjusting the temperature. Water-saving fixtures save not only water, but hot

Daily Water Use for a Typical Family of Four

<i>Activity</i>	<i>Water Use (gallons)</i>
Toilet flushing	90
Shower and bathing	92
Laundry	68
Dish washing	12
Bathroom sink and other	36
Leaks (waste)	4
Total	302

Source: U.S. EPA

water, thereby lowering energy and heating costs. (Caution: look for a good quality low-flow showerhead, not a "flow restrictor" or cheap plastic fixture which may provide an unsatisfactory shower.)

- | **Install an Ultra-low consumption toilet** – Toilet use comprises almost 40% of indoor water use. Most conventional water saver toilets use 3.5 gallons per flush or more. Older toilets may use 5 to 7 gallons per flush. Newer **Ultra-low consumption toilets use 1.6 gallons per flush**. Saving water inside the house can also save on water and sewer costs.
- | **Place a weighted plastic bottle in your existing toilet to displace and save water each time it is flushed.** Make sure the bottle does not interfere with the flushing mechanism. Do not use bricks; they can disintegrate and cause problems.
- | **Turn off the water while shaving and brushing your teeth.** Just turn it on when needed to rinse. Running faucets use 3 to 5 gallons of water a minute.
- | **Take short showers rather than baths**, and use a shut-off valve to turn off water when soaping up and shampooing.
- | **Do not use the toilet as a trashcan or ashtray.** Flushing cigarette butts and tissues wastes 3 to 5 gallons of water each time and may foul your septic system.

In the Kitchen

- | **Wash only full loads in the dishwasher.** Hand wash small dish loads. Scrape dishes first, then plug the sink for washing and rinsing. Turn water on only for the final rinse.
- | **Don't use running water to quick-thaw frozen foods**. Plan your meals ahead of time and allow time for defrosting.
- | **Minimize use of the garbage disposal**, or don't use it at all.
- | **Keep a jug of drinking water in the refrigerator**, rather than running the tap water until it gets cold.
- | **Install a faucet aerator** on the kitchen tap.

In the Laundry Room

- | **Buy a water and energy efficient washing machine.** Front loading styles generally use less water than top loading.
- | **Wash only full loads**, or use a variable load size selector.

Outside the House

- | **Landscape your yard with plants that don't require a lot of water.** Plants native to the area generally use less water. Landscaped areas generally use

“By installing a few simple water-saving devices, costing less than \$50, the average household can save more than 30,000 gallons of water and over \$60 in water and energy costs each year. If every American made this investment, together we would save enough water to cover a football field 1,500 miles high, energy equivalent to 7 huge power plants, and over \$1.3 billion per year.”

- Amory Lovins, Director of
Research, Rocky Mountain Institute

less water than lawns. Use mulch around trees and shrubs to reduce evaporation. Keep grasses two to three inches high to help retain moisture.

- | **Lawns are normally dormant during the summer and therefore do not need water. If you must water the lawn, do it during the coolest time of the day, preferably the morning, to minimize evaporation.** Watering deeper but less often is better than frequent shallow watering. Water slowly to avoid run-off. Use low-pressure perforated hoses rather than sprinklers for watering shrubs and gardens. Do not water streets, driveways, or other impervious surfaces. Use automatic timers to shut off water after an appropriate period.
- | **Apply fertilizers in the early spring and fall.** Fertilizing in late spring and during the summer encourages growth that needs watering during dry summer months.
- | **Use an automatic shut-off nozzle on your hose when you wash your car,** and let the water drain to lawn and garden rather than down the gutter. Better yet, take your car to a commercial car wash that recycles the water.
- | **Use a broom instead of a hose** for cleaning driveways, patios, etc.

In General

- | **Think about Water Conservation.** Think about where you use water every day and what you can do to use it more efficiently. Remember that when you save water, you can also be saving money: on water bills, on sewer bills, and on energy costs.

REDUCE, REUSE, RECYCLE

The average household in Washington throws away about 5,110 pounds of solid waste in a year. We have all become aware of the problems associated with disposing of this trash, including the production of leachate and explosive gas at landfills and the generation of air pollutants and potentially dangerous ash at incinerators. These are good reasons for reducing our waste generation, but there is more to it than that: every time we throw something away, we also are throwing away the raw materials and energy that went in making it, this is why the THREE R's are so important. Reducing, reusing, and recycling our waste will have an impact on all aspects of the environment. Here are some tips to get you started.

- | **Find out what is recyclable in your area, and recycle it.** Learn the location of the recycling center nearest you and find out what it will accept. You can get this information by calling 1-800-RECYCLE from anywhere in Washington.
- | **Each American household receives about 1 1/2 trees' worth of junk mail in a year.** You can reduce the amount of junk mail you receive (and subsequently throw away) by sending a request that your name be removed from selected lists to: **Mail Preference Service, Direct Marketing Association, P.O. Box 9008, New York NY 11735-9008.** Your name will continue to be added to mailing lists as you use your credit cards or make mail order purchases, so this method of

Americans throw away enough aluminum per year to rebuild the entire American airfleet 4 times, enough steel to reconstruct Manhattan, and enough wood and paper to heat five million homes for 200 years.

waste reduction will be most effective if you send a request to the MPS periodically.

Also keep in mind that some of the junk mail that keeps coming can be recycled at a RECYCLE DELAWARE center (see back cover).

- ‡ **Buy goods in containers that are recyclable or made from recycled material.** Glass and aluminum are good choices for beverages and other food items – they are 100% recyclable. On other containers, look for the word "recycled" or the "recycled" logo. Many paperboard boxes (the kind that hold cereal, crackers, etc.) are made from recycled paper. Look for boxes that are gray on the inside – they probably are recycled.
- ‡ **Buy goods in the least amount of packaging you can find.** As much as 1/3 of what we buy is packaging material.
- ‡ **Buy in bulk.** Buy the largest size of an item that you will use before it spoils; you will get more product for less packaging that way. Products such as laundry detergent, shampoo, paper products, and other nonperishables can be purchased in large quantities; this will save you money as well as decrease the amount of waste your household produces.
- ‡ **Buy concentrates** when available.
- ‡ **Buy cloth or string bags to use when grocery shopping.** Both plastic and paper grocery bags are costly to the environment. If you do use the plastic or paper bags provided by the supermarket, use them over and over until they tear or break. Many area supermarkets are now recycling plastic bags, so when your wear out, have them recycled. Paper bags are recyclable in most areas but durable cloth or string bags are always a better choice.
- ‡ **Keep batteries out of the waste stream.** Batteries can release toxic materials when landfilled or incinerated. Recycle all of your spent household batteries. Call 1-800-RECYCLE to find out how to dispose of spent batteries properly. Reduce the number of batteries your household generates by using rechargeable batteries. The initial cost is greater than the cost of regular batteries, but since they can be recharged hundreds of times, they conserve natural resources and will also save you money in the long run. Consider purchasing a solar powered charger for rechargeable nickel-cadmium batteries.
- ‡ **Buy products that are designed to last a long time .** Avoid disposables such as paper plates, plastic eating utensils, disposable cameras, and disposal razors.
- ‡ **In the great diaper debate, cloth comes out as a better choice, environmentally, than disposables.** Cloth diapers are reusable up to 200 times, and even when they are worn out, they make great rags. The manufacture of disposable diapers consumes a large quantity of petroleum and even more wood pulp – all for an item that will be used for only a few hours. Of course, cloth diapers also have an impact on the environment: Energy, water, and soap or detergent must be used to wash them after each use; if a diaper service is used, there are the additional environmental costs

associated with the transporting of the diapers. Whether you choose to use cloth or disposables, try to minimize the environmental impacts. Wash cloth diapers in full loads, using low-phosphate detergent or soap. If you use disposables, keep a good supply on hand so you don't have to make special trips to the store just to buy diapers. Manufacturers are constantly looking for ways to make disposables more environmentally friendly – for example, by reducing the amount of material used to make the diapers and by making diapers that are highly absorbent and therefore require fewer changes – so keep your eyes open for these sorts of developments.

REDUCING HAZARDOUS WASTE IN THE HOME

Many hazardous substances are commonly used in the home. Not only are these materials dangerous to the inhabitants of the house if not used and stored properly; they pose hazards to the environment and to the general public if not disposed of in an appropriate manner. The best way to avoid any problems from household

Chemical Hazards in the Home

Product	Safer Alternative	Product	Safer Alternative
Aerosol Sprays	Use lotions, gels or non-aerosol sprays	Insecticides	Introduce predator insects—ladybugs, lacewings and praying mantises—to your garden. Make your yard attractive to birds, amphibians, reptiles and bats to help control insects. Apply soapy water to leaves and rinse well.
Batteries	Use rechargeable batteries	Moth balls	Spread out newspapers in closets and place cedar chips around clothes.
Chlorine bleach	Use non-chlorine bleach or borax	Oven cleaner	To soften burned spills, heat oven to 200 and turn off. Leave small dish of ammonia in oven overnight and wipe with damp cloth and baking soda.
Drain opener	To prevent clogging, pour boiling water down drains twice a week and always use the strainer. Use a plumbing snake or a plunger to unclog drains	Paint	Use water-based paints whenever possible to avoid need for strippers, thinners and other solvents.
Furniture polish	Use a solution of 1 tsp. lemon oil and 1 pint mineral oil. Toothpaste gets rid of water stains and salt helps with grease spots.	Rug cleaner (containing solvents)	Sprinkle on dry cornstarch and then vacuum. For red wine spills apply salt immediately.

hazardous wastes is to avoid buying these products in the first place. In many cases, there are nonhazardous or less hazardous substitutes that will do the same job. The attached table, "Chemical Hazards in the Home", lists many common household products that may pose a hazard and substitutes that are easily accessible.

- | **If you must buy an item that is potentially hazardous, be sure to buy only as much as you need and to follow the instructions on the label for proper use, storage, and disposal.** Contact your city or county government for information about household hazardous waste disposal or call 1-800-RECYCLE statewide.
- | **Never pour anything down the drain or onto the ground** unless the label on the container specifically states that this is a proper use or disposal of the product.
- | **Used oil can be a threat to water quality when disposal improperly.** It is also a valuable resource which can be recycled and used again just like a new oil. Call 1-800-RECYCLE for a recycling location near you.
- | **Some household items, such as tires, appliances, etc. require specialized handling or disposal.** For information on how to properly handle these types of waste call your city or county government or call 1-800-RECYCLE.

Guide to Composting

1. Select a flat, well-drained spot which gets full sunlight. Try to build your pile in the middle of your garden.
 2. Construct a compost bin out of scrap lumber, bricks, concrete blocks or wire. Make sure the bin has openings to let air penetrate pile.
 3. Feed the pile, mixing coarse and fine materials in 6 to 8 inch layers. The bottom layer should consist of twigs, wood chips or other coarse materials. Next add a layer of material high in nitrogen such as grass clippings. Top with a layer of soil and repeat the process. Sprinkle the pile with water.
 4. Make sure the pile is at least three feet by three feet, but don't build the pile more than five feet high. Turn it every three to four days and remoisten the material as you turn it.
-

AN ENVIRONMENTALLY FRIENDLY YARD

Yard waste can make up as much as 20% of the material going into a landfill. Not only does this needlessly use up landfill space; it deprives the soil of a readily available, natural source of nutrients. We make up for this loss of nutrients to our lawns by applying fertilizers, often in quantities far greater than necessary. Fertilizer applied at the wrong time or in the wrong way can end up in streams and rivers, causing serious water pollution. The same thing can happen with pesticides, which can also result in serious ecological damage as well as health problems.

The Washington State University Cooperative Extension Service is an excellent source of information on proper care of your lawn and garden. Call the Extension Office in your county for help in diagnosing problems in your yard and developing a maintenance plan that will keep your lawn and the environment healthy.

- | **Learn how to compost** your leaves, grass clippings, and garden waste. Composting is easy and can be inexpensive – no sophisticated equipment is needed. You can add kitchen scraps to the compost pile to further reduce the amount of waste you send to the landfill. (Be careful not to include meat and bones in the compost as this may attract animals.)

- | **When you mow, set the blades to cut the grass 2 or 3 inches high.** Most grasses are healthier at this height than when cut very short. This also helps to control weeds. Mow often, and leave the clippings on the ground. They will help keep moisture in and will provide nutrients to the soil as they decompose.
- | **It is sometimes desirable to rake up grass clippings** (if the yard needs thatching or if the grass is so tall that it would harm the lawn if left in place). **In those cases, add the grass clippings to the compost pile.**
- | **Landscape your yard with plants that don't need a lot of extra water or fertilizer and that are resistant to pests.** Plants that are indigenous to the area are the best choice, since they are already adapted to the type of soil and amount of rainfall that they will be exposed to in your yard. Non-native plants may require twice as much water as native plants that are just as attractive. Native plants will also help the ecology by attracting native wildlife.
- | **If you have pesticides that you bought more than 3 years ago,** they may contain ingredients that are now banned or restricted because of known hazardous effects that they have on the environment and on humans and other living things. Many others have not been completely evaluated. If you have pesticides that you know or suspect to be hazardous, **keep them stored in a safe place until you can dispose of them as part of a household hazardous waste collection program.**
- | **Minimize the need for pesticides** by choosing plant species that are resistant to insects and diseases. Avoid growing large groups of one type of plant. Provide habitat for birds, toads, etc., that prey on insect pests. Introduce praying mantises, lacewings, ladybugs, and other pest eaters to your garden. Contact garden clubs and environmental organizations or your extension service office for information about natural pest control.
- | **If you must use pesticides, use them sparingly.** Try to find natural alternatives, such as insecticidal soap and dormant oil.
- | **Keep your soil healthy.** Contact your county extension agent to find out how to test your soil for acidity and organic content. The extension service can advise you as to how to improve your soil. Try to avoid chemical fertilizers in favor of organic manure's and compost.

YOUR AUTOMOBILE AND THE ENVIRONMENT

It will not come as a surprise to anyone that automobiles have numerous negative impacts on the environment. They are a significant source of global warming gases (burning one gallon of gasoline puts about twenty pounds of carbon dioxide into the atmosphere). They release hydrocarbons and nitrous oxide, which combine in sunlight to produce ozone, a common problem in Washington. They also contribute to acid rain.

To accommodate America's millions of cars, more than 60,000 square miles of land have been paved – about two percent of the total surface area in the U.S., an area as large as the state of Georgia.

No automobile is "environmentally friendly" or even "environmentally benign". However, there are things that each of us can do to reduce the impact that our automobiles have on the environment:

- | **Use your car less.** Use public transportation or join a carpool. For assistance in organizing or joining a carpool, call Washington State Department of Transportation at (360) 705-7616. For short trips, walk or ride a bike.
- | **Buy the most fuel-efficient car** you can find that will meet your needs. The more fuel a car uses, the more it harms the environment.
- | **Extra weight and energy-using accessories decrease gas mileage.** Carrying around an extra 100 pounds can increase your gas usage by 1%.
- | **Standard transmission cars are more efficient** than automatics.
- | **Replacing worn out bias tires with radial tires can increase your gas mileage by as much as 5% in the city, 10% on the highway.** Radials also last longer, so they don't contribute as much to the waste tire disposal problem.
- | **Underinflated tires can decrease your mileage** by up to one mile per gallon.
- | **Keeping your car properly tuned can increase fuel efficiency** by up to 8%.
- | **Other things that you can do** to get the best possible efficiency from your automobile: make sure the wheels are properly aligned; keep the air filter clean; make sure the brakes aren't dragging; have the oil changed regularly.
- | **The way you drive can also affect fuel efficiency. Drive smoothly,** avoiding jackrabbit starts and sudden stops. Don't exceed the speed limit; cars get about 20% better mileage at 55 miles per hour than at 70 mph. Avoid wasteful driving – letting your car idle for more than one minute uses more gas than restarting the engine.
- | **When buying a new car, think seriously about whether you really need an air conditioner.** Automobile air conditioners reduce fuel efficiency by adding weight to the car. When they are being operated they decrease mileage even more. In addition, they are a major source of the release of chlorofluorocarbons (ozone-depleting chemicals) into the atmosphere. You can reduce your need for air conditioning by buying a light-colored car; it will stay cooler than a dark one. Tinted glass also helps keep a car cool.
- | **If you do have an air conditioner, use it only when you need it and keep it in good working order.** Have it serviced by qualified persons. If the air conditioner needs recharging, have it repaired first; if freon is escaping, you have a leak.

Burning just one gallon of gasoline generates nearly 20 pounds of carbon dioxide, the major cause of global warming

GREEN CONSUMERISM

More and more people are turning to **green consumerism** as a way of translating their concern for the environment into action. The concept of **green consumerism** is known by a number of different terms – **environmental consumerism, green purchasing, environmental shopping** – but they all mean basically the same thing: buying products that don't harm the earth.

As consumers, we tell industries what to produce by buying or rejecting their products. As more and more people reject environmentally harmful products in favor of safer alternatives, industries will respond by manufacturing goods that are more environmentally friendly. This places a huge responsibility on the consumer. It is often difficult to know what companies mean when they label their products as "environmentally friendly" or "biodegradable" or "natural". There are no nationally accepted standards governing the use of such terms.

It is also difficult to know all of the impacts that a given item has on the environment. Very few products are perfectly "green" (totally harmless to the environment). Green consumerism means choosing those products that have the least possible negative impact. In order to make such a choice, we must consider such things as how much energy went into producing and transporting the product; whether it was made from renewable or nonrenewable materials; how much pollution resulted from its manufacture and transport; how much waste was produced; how much energy it will consume during its useful life; how much and what kinds of pollution will be generated by using the product; how long the product will last; what will be the proper method of disposal.

Most of us are probably already practicing green consumerism to some extent, but there is always more that we can do.

- | **Follow the suggestions contained in the other sections of this kit;** they are all a part of the concept of green consumerism.
- | **The Pennsylvania Resources Council offers information on environmental shopping,** including an Environmental Shopping Kit which is available for a small fee. You can write to the PRC at P.O. Box 88, Media PA 19063, or call (215) 565-9131.
- | **Contact manufacturers with your comments (positive and negative) about their products.** Many products have an 800 number listed on the package for this purpose.
- | **Don't assume that a product is environmentally friendly just because the label says it is.** There are no standard definitions of terms such as "nontoxic" and "environmentally safe", which are appearing on more and more products. Also keep in mind that there is no advantage to buying something labeled "recyclable" unless there is a place that you can take it to have it recycled.
- | **Consider both the product and the packaging** when trying to determine how "green" an item is.

In 30-40 days, each American throws out his or her own weight worth of packaging materials.

Special Accommodations

The Department of Ecology is an equal opportunity employer.

If you have special accommodation needs or require this document in an alternative format, please contact Michelle Payne at (360) 407-6129 (voice) or (360) 407-6006 (TDD)

For More Information

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